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# Introduction

There are many obstacles in the way of creating a successful tech start-up, from putting together a competent team to locating the best resources and mentors. A recurrent bottleneck persists despite the rise of digital entrepreneurs: a dearth of easily available platforms that promote productive teamwork and deep connections.

A networking and collaboration tool created especially for tech start-ups is called Co-Lab Connect. To link founders with possible co-founders, team members, and mentors, the app uses AI-driven matchmaking. To facilitate smooth project management, it also offers a virtual collaboration area furnished with resources like task boards, video conferencing, and shared code repositories. With the help of its creative Skill swap feature, users may swap knowledge (for example, coding skills for design help), fostering a vibrant community of support and development.

In keeping with the goal of supporting high-tech start-ups, Co-Lab Connect empowers entrepreneurs to strengthen teams, encourage innovation, and expedite communication to address important pain issues. Start-ups will have access to resources through this platform that are necessary for expansion and sustainability in the cutthroat tech sector.

# Main Features

# Forming a Development Team

Development Team

Stated below are the names, roles and skill required for this project

|  |  |  |
| --- | --- | --- |
| Name | Role | Skills |
| Chiagozie Maduemesi | Product Owner | Business strategy, stakeholder communication |
| Faith Okunola | Content Strategist and researcher | Market analysis, persona creation, content writing |
| Onolemen Omokhuale | UI/UX Designer | Figma, prototyping, user research |
| Shresta Rapol | Back End Developer | Database design, server-side development |
| David Carter | Full Stack Developer | Node.js, React.js, MongoDB, API development |
| Mese Lee | Q/A Engineer | Testing frameworks, front-end coding, documentation |
| Oneal Williams | Scrum Master | Agile processes, team facilitation |

The Development team is presented below

|  |  |  |
| --- | --- | --- |
| Role | Team Members | Task |
| Porduct Owner | Chiagozie Maduemesi | - Represents the customer and stakeholder interests |
|  |  | - Prioritizes features and manages the product backlog. |
|  |  | - Defines the vision and goals for Co-Lab Connect. |
| Scrum Master | Oneal Williams | - Facilitates sprint planning, reviews and retrospectives and ensures the team follows agile principle. |
| Brainstorming | Onolemen Omokhuale, Shresta Rapol, Faith Okunola, David Carter. | - Generating ideas for user experience and technical implementation |
| Research | Faith Okunola, Omokhuale Onolemen | -Findings on already existent platforms and collaboration tools, skill exchange platform, AI algorithm. |
| Business Model | Chiagozie Maduemesi, Faith Okunola | Creating sustainable business strategy aligning with the startup goals as well as defining revenue streams. |
| Market Analysis and Personas | Faith Okunola, Omokhuale Onolemen | -Developing personas for target audience and also analyzing market needs. |
| UseCases | Mese Lee, Shresta Rapol | - Defining user interactions with match making and collaboration tools. |
|  |  | -Creation of flowcharts for document use. |
| Entity Relationship Diagram | Shresta Rapol, David Carter | -Design the database schema users, connections, task and skill exchanging. |
|  |  | -Ensuring scalability for future growth. |
| Class Diagram | Shresta Rapol, Mese Lee | -Mapping key features like match making, tasks, and repositories to class relationships. |
|  |  | -Designing the system object-oriented architecture. |
| Content Plans | Omokhuale Onolemen, Mese Lee | -Creation of content for the platform, including landing page, user profiles and features description. |
|  |  | -Writing community guidelines and onboarding |
| Prototype Mockups | Omokhuale Onolemen, Mese Lee | -Figma designs |
|  |  | -Creative interactive prototypes to demonstrate navigation and features. |
| Code Development | Shresta Rapol, David Carter, Mese Lee | -Develop front-end and back-end. |
|  |  | -Integration of APIs for AI matchmaking and conferencing. |
| Testing | Mese Lee, Oneal Williams | -Unit, integration and regression testing |
|  |  | -Usability testing and feedback. |
| Documentation | Oneal Williams, Mese Lee | -Writing user manuals and onboarding guidelines. |
|  |  | -Create technical documentation for the system (API references, database schema) |

# Preliminary Research

# Brainstorming

**Goals and Benefits**

1. **Enhanced Networking**:
   * **AI-Powered Matchmaking**: Match users based on their skills, goals, and project needs.
   * Filters to find collaborators by location, industry focus, or development stage.
2. **Efficient Collaboration**:
   * **Integrated Workspace**: Tools for task management (e.g., Kanban boards), video conferencing, and GitHub repositories.
   * Shared document editing and real-time collaboration features.
3. **Skill Exchange**:
   * A points-based system to exchange services, promoting a barter-like ecosystem.
   * For example, a developer can exchange coding services for marketing expertise.
4. **Start-Up Empowerment**:
   * Access to curated resources, such as funding opportunities, business templates, and industry best practices.
   * Build long-term partnerships with aligned professionals and organizations.

**Key Features**

* **User Profiles**: Detailed profiles showcasing skills, projects, and collaboration preferences.
* **AI Matchmaking Algorithm**: Automated and manual search options to find ideal matches.
* **Virtual Workspaces**: Dedicated spaces with video conferencing links, shared repositories, and task boards.
* **Community Forums**: Networking events, Q&A sessions, and discussion boards for peer-to-peer support.

**Competitive Differentiation**

While platforms like LinkedIn offer networking opportunities, Co-Lab Connects tailored focus on the tech start-up ecosystem and its integrated tools for collaboration and skill exchange make it uniquely positioned to solve start-ups’ specific challenges.

# Research – Web Market Analysis

# Description

# Technical Requirements

Personas

# Use Cases

A diagram of a diagram

Description automatically generated

Use Case Description:

|  |  |
| --- | --- |
| **UseCase Name** | **Description** |
| Register/create Profile | Allows users to register on the platform and create a detailed profile, including their skills, goals, and preferences to help match them with others. |
| Provide Mentorship | Enables users to offer their expertise to others by setting up a profile as a mentor, listing their skills and areas of mentorship. |
| Search for Mentors | Users can search for available mentors based on skills, goals, and other preferences to find the right person to guide them. |
| AI Matching/AI\_search | The system uses AI to match users with co-founders, mentors, or collaborators based on their profiles, skills, and goals. |
| Connect with Potential Team Members | Allows users to connect with potential team members after matching, sending collaboration requests that can be accepted or declined. |
| Initiate a Video conference | Users can initiate video calls to discuss projects or collaborate in real-time, facilitating communication regardless of location. |
| Manage Task Board | Users can create and manage task boards for their projects, assigning tasks to collaborators and tracking progress |
| Create Virtual Collaboration Space | Users can create a virtual space to collaborate on projects, including tools like document sharing, code repositories, and task management. |
| Offer Skill Exchange | Users can offer their skills to others in exchange for services (e.g., coding for design), promoting skill-sharing within the platform. |
| Request Skill Exchange | Users can request skill exchanges with others based on their needs, browsing available offers and proposing exchanges. |

# Activity Diagram

A diagram of a process

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# Entities (20 marks)

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# Content Plans (10 marks)

Home Page

* Hero Section:
  + Headline: "Connect. Collaborate. Innovate."
  + Call to Action: "Start Your Journey"
* Feature Highlights:
  + AI Matchmaking: Explain how AI matches users based on skills, interests, and goals.
  + Virtual Collaboration Space: Showcase the features of the virtual workspace.
  + Skill Exchange: Highlight the benefits of trading skills.
* Testimonials:
  + Quotes from satisfied users.
* Call to Action:
  + Prominent sign-up button.

Sign-Up Page

* Basic Information:
  + Name, email, password
* Profile Creation:
  + Skills, interests, goals
  + Preferred collaboration style (remote, in-person, hybrid)
  + Time zone
* AI Matchmaking Preferences:
  + Ideal co-founder or team member traits
  + Desired skills or expertise

Dashboard

* Personalized Feed:
  + AI-matched potential collaborators
  + Upcoming events and webinars
* Virtual Workspace:
  + Project boards
  + Video conferencing
  + File sharing
  + Code repositories
* Skill Exchange Marketplace:
  + Post offers and requests for skills
  + Browse other users' offers
* Messaging:
  + Direct messaging with other users
  + AI Matchmaking Algorithm
* User Profile Analysis:
  + Extract key information from user profiles (skills, interests, goals, location, time zone)
* Similarity Calculation:
  + Use algorithms like cosine similarity or TF-IDF to measure the similarity between user profiles.
  + Consider factors like shared interests, complementary skills, and geographic proximity.
* Matching Criteria:
  + Prioritize matches based on user preferences and compatibility.
  + Consider factors like project stage, team size, and desired level of collaboration.
* Match Recommendations:
  + Present users with a list of potential matches, along with relevant information about their skills, experience, and availability.

Skill Exchange Platform

* Skill Listings:
  + Users can create listings offering their skills or requesting specific skills.
  + Include details like skill level, availability, and preferred collaboration methods.
* Skill Trading:
  + Users can negotiate and agree on terms for skill exchanges.
  + Implement a system to track and verify completed exchanges.

Additional Features:

* Community Forums:
  + Discussion boards for general topics and specific project discussions.
* Mentorship Program:
  + Connect experienced entrepreneurs with aspiring founders.
* Event Calendar:
  + Promote upcoming tech events, workshops, and hackathons.
* Resource Library:
  + Curated collection of articles, tutorials, and tools.

# Prototypes (20 marks)

# Class Diagram (20 marks)

A diagram of a computer program

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# Implementation - Developing the Agile Plan (20 marks)

# Conclusion

In conclusion, Co-Lab Connect provides a ground-breaking answer to one of the biggest problems that tech entrepreneurs are currently facing: efficient networking and cooperation. This platform enables start-ups to develop better teams and achieve sustainable growth by combining AI matchmaking, powerful project management tools, and a dynamic skill exchange system.  
  
The platform may be expanded in the future to include:  
sophisticated analytics to monitor individual contributions and project success.  
collaborations with academic institutions to offer certification and training courses.  
Improved funding prospects thanks to characteristics that match investors.

Co-Lab Connect essentially creates an end-to-end ecosystem that is customized to meet the specific requirements of tech entrepreneurs, going beyond conventional networking platforms. It not only fits with the idea of helping high-tech startups, but it also offers a basis for creativity and cooperation in the larger corporate environment.

# Team Contributions

|  |  |
| --- | --- |
| **Team Members** | **Content covered** |
| Chiagozie, Maduemesi | Introduction, Brainstorming, Features and Conclusion |
| Faith, Okunola | Personas, Descriptions, Web Analysis, Technical Requirement |
| Onolemen, Omokhuale | Forming Development Team, Content plans and prototype. |
| Shresta, Rapol | use cases , ER diagram, Activity diagram, class diagram, Developing Agile Plan excel sheet |

# References